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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,098	09/09/2003	Philip E. Nelson	PU113	9965

7590 05/17/2006

Mr. Edward J. Timmer
Walnut Woods Centre
5955 W. Main Street
Kalamazoo, MI 49009

EXAMINER

CONLEY, SEAN EVERETT

ART UNIT	PAPER NUMBER
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1744

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

6

Office Action Summary	Application No. 10/658,098	Applicant(s) NELSON ET AL.	
	Examiner Sean E. Conley	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 8-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/26/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-7 in the reply filed on February 28, 2006 is acknowledged. Claims 8-15 are withdrawn from consideration as being directed to a non-elected invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-3, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raasch et al. (U.S. Patent No. 6,277,328 B1) in view of Heredia (U.S. Patent No. 5,961,936).

Regarding claims 1, 2 and 7, Raasch et al. discloses a process aseptically transporting a bulk quantity of a sterile product such as an edible food product. The process comprises sterilizing a transporting container by first circulating chlorine dioxide gas for a period of time inside the container and then removing the chlorine dioxide gas from the container (see col. 4, lines 29-50). Raasch et al. fails to teach the step of reclaiming the chlorine dioxide gas by dissolving it in a solvent in a gas-dissolving tank.

Heredia discloses a process generating, administering, extracting, and recovering sterilant gas such as chlorine dioxide from a process of sterilizing and/or decontaminating enclosed spaces (see col. 1, lines 5-10). The steps of extracting and recovering include passing the sterilant gas through a gas recovery system (310) via line (302) after the sterilization process is complete. The gas mixture that has already been circulated through an enclosed space needs to be exhausted in an environmentally safe manner and/or treated in a manner that facilitates the recovery of one or more ingredients. The gas mixture containing chlorine dioxide is passed through

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inlet (316) and into scrubber (334) wherein the gas mixture is interacting with a scrubber solution (see col. 14, lines 30-61; col. 15, lines 28-32). Heredia discloses that scrubber solutions are well known to those of ordinary skill in the art, however, as evidenced by Harke et al. (U.S. Patent No. 3,904,496), a known scrubber solution for recovering chlorine dioxide is water. When the water is contacted with a gas mixture containing chlorine dioxide it will separate out the chlorine dioxide as an aqueous solution from the other components of the gas stream (see col. 4, lines 42-58 of Harke et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Raasch et al. and include the step of reclaiming the chlorine dioxide gas by directing the gas to a gas dissolving tank where the chlorine dioxide gas is dissolved in a solvent (water) as taught by Heredia in order to recover the chlorine dioxide for environmentally sensitive disposal or for later use in generating a new sterilant gas.

Regarding claim 3, Raasch et al. discloses that the chlorine dioxide gas is produced outside of the container (see col. 2, line 65 to col. 3, line 28; col. 5, lines 5-8).

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raasch et al. in view of Heredia as applied to claim 1 above, and further in view of Barenberg et al. (US Patent Application Publication 2003/0190273 A1).

Raasch et al. in view of Heredia fail to teach the step of producing chlorine dioxide gas inside of the container.

Barenberg et al. discloses a container liner for generating an antimicrobial gas such as chlorine dioxide in order to control bacteria, mold, and fungus on perishable food items (see paragraphs [0001]-[0003]). The chlorine dioxide gas is generated inside the container over a length of time thereby increasing shelf life and preserving the quality of the food. The liner (10) is located in a food container (display case (14)) and comprises compartments (20) containing gas-generating chemicals (22) which generate chlorine dioxide gas inside the food container (14) (see paragraphs [0017]-[0019], [0025], [0030]). This reference has been relied upon to teach that it is well known to generate chlorine dioxide gas inside of a food container.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Raasch et al. in view of Heredia and include the step of generating chlorine dioxide gas inside of the chamber as taught by Barenberg et al. in order to extend shelf life and preserve quality of the food for a longer period of time by constantly generating and releasing chlorine dioxide over a predetermined period of time when food is present within the container. Furthermore, by generating the chlorine dioxide gas inside of the container it reduces the hazards and risks to users who would otherwise handle the chlorine dioxide gas that is generated externally and injected into the container.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raasch et al. in view of Heredia and Barenberg et al. as applied to claim 4 above, and further in view of Mayurnik et al. (U.S. Patent No. 5,006,326).

Raasch et al. in view of Heredia and Barenberg et al. fail to teach the step of producing chlorine dioxide inside the container by providing an aqueous chlorine dioxide solution in the storage container and bubbling a gas through the solution in the storage container.

Mayurnik et al. discloses a gaseous generator system for preparing chlorine dioxide gas. The chlorine dioxide gas is useful for a variety of process including a large number of bactericidal applications, especially in odor abatement and water treatment (see col. 1, lines 1-21). The process first includes the step of providing an aqueous stream of chlorine dioxide and then contacting the aqueous stream with an inert gas stream or an air stream in countercurrent fashion in order to strip the chlorine dioxide from the aqueous stream and thereby produce a gaseous stream of chlorine dioxide (see col. 2, lines 19-35). This reference has been relied upon to teach a functionally equivalent alternative means for generating chlorine dioxide gas.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Raasch et al. in view of Heredia and Barenberg et al. and replace the means of generating chlorine dioxide (gas generating chemicals in compartments of a liner – see Barenberg et al.) with a functionally equivalent viable alternative such as the process taught by Mayurnik et al. which includes the steps of providing an aqueous stream of chlorine dioxide and then contacting the aqueous stream with an inert gas stream or an air stream in countercurrent fashion in order to strip the chlorine dioxide from the aqueous stream and thereby produce a gaseous stream of chlorine dioxide.

Furthermore, it would have been obvious to select the known process of Mayurnik et al. for generating chlorine dioxide gas in place of the chlorine dioxide generating process of Raasch et al. in view of Heredia and Barenberg et al. based on its suitability and desired characteristics.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raasch et al. in view of Heredia as applied to claim 1 above, and further in view of Young et al. (U.S. Patent No. 4,193,818).

Raasch et al. in view of Heredia fail to teach the step of removing the chlorine dioxide gas by flushing the container with a filtered gas.

Young et al. discloses a container (pressure vessel (10)) having a chamber (18) for sterilizing articles using ultrasonic energy and biocidal treatment. After the step of sterilization the sterilizing fluid is vented from the chamber and air is admitted into the chamber (18). Specifically filtered air is used to flush the sterilant from the chamber in order to assure that the sterilized materials are not re-infected with bacteria from the air stream (air is a gas) passing therethrough (see figure 1; col. 3, lines 15-32; col. 6, line 49 to col. 7, line 5). This reference has been relied upon to teach that it is well known in the art of sterilant removal after treatment to use a filter air stream to flush out the chamber in order to prevent contamination of the sterilized materials.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Raasch et al. in view of Heredia and include the step of flushing the sterilant out of the container using filtered air as

taught by Young et al. in order to remove the sterilant from the container and also prevent contamination of the articles that were just sterilized.

Conclusion

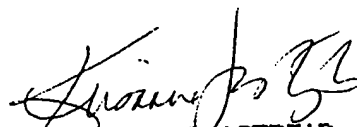
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E. Conley whose telephone number is 571-272-8414. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEC

May 11, 2006


KRISANNE JASTRZAB
PRIMARY EXAMINER